# Missouri Adult Education and Literacy
# State Technology Plan

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## Introduction

In today's global society, it has become increasingly important and vital to be able to access and use technology. Students, teachers, directors, and others affiliated with Missouri's Adult Education and Literacy (MO AEL) programs are no exception. In an effort to address the many aspects of technology and its affect on the classroom, the local program, and the state, a Technology Committee was established. In the fall of 2001, a group of individuals came together to form the AEL Technology Committee and write a comprehensive MO AEL State Technology Plan. This committee has worked diligently over many months to provide a guiding document that promotes the use of technology within local AEL programs and details plans for the future.

## List of Contributors

Members of the AEL Technology Committee contributing to this document include:

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## Vision Statement

Striving to lead the way in the country, Missouri Adult Education and Literacy (AEL) programs will focus on state-of-the-art technology packages that integrate multiple delivery modes while providing students with a personal touch. Class sites, programs, and the state department will be interconnected to facilitate communication, data collection, and information gathering. Hardware and software purchases and upgrades will be of high quality and will provide students and teachers with easy, equitable access to technology. Internet connectivity, virtual classrooms, and other distance learning technologies will be utilized to facilitate multiple modality instruction. Continuous research and improvement will be sought in working with special populations and

meeting their unique needs while continuing to provide economically feasible and cost-effective instruction for all.

## Technology Beliefs

The term "technology" can be defined in a multitude of ways. "Technology" can refer to the use of a computer in a classroom, or it can be used to describe video production and distance learning classrooms. Each type of technology has different uses and fulfills different learning goals.

No matter what the definition, "technology" can be used to bolster and increase learning. Various technologies transport assorted types of content and serve different purposes in the classroom. Each type of technology plays a different role in students' learning; yet, each different technology provides teachers and students with learning opportunities.

The chart below illustrates the technology beliefs of the MO AEL Technology Committee.

| Belief | Support |
|---|---|
| Technology creates new teaching and learning opportunities. | Technology supports fundamentally different forms of interaction between students, teachers, and communities. It contributes to an environment in which teaching and learning move from instructor-centered to learner-centered education, from individual tasks to collaborative work, and from passive learning to engaged learning. Technology provides students with the means to explore, discover, and construct their own knowledge. |
| Technology provides a channel for unbiased learning opportunities. | Distance learning and other technologies provide a means for a more unbiased and diverse education for all students. Learners in every community need consistent access to a basic set of technical tools. |
| Technology provides opportunities for collaboration. | Technology empowers community members to learn from each other. Technology broadens the extent of the resources available to learners, including the ability to draw on the strengths of others through distributed learning power. Technology removes the limitations of time and space when collaborating with others. Technology provides a catalyst for interdisciplinary studies and team teaching. |

| Belief | Support |
|---|---|
| Technology provides powerful tools for problem solving. | Technology encourages different forms of interactions among students, teachers, and the global community. These different interactions engage students systematically in higher-order cognitive tasks. Technology helps students develop inquiry, investigative, and creative problem solving skills that can be applied to real life situations and enable them to make better decisions. Technology allows students to work on problems, which were previously out of reach of the program curriculum. |
| Technological advances necessitate that the accessing, processing, and application of information will become critical life skills. | Access to information is no guarantee that learning will occur. The development of methods to gather information through technology and to organize, synthesize, and assimilate that information with the assistance of the tools of technology must be an important goal in planning the education of students. |
| Technology provides improved communication prospects. | Staff and students discover and exchange information and knowledge with the larger community comprised of their classroom, school building, local community, state, nation, and world. |
| Technology implementation is a continuous process. | Technology changes rapidly. AEL programs must remain abreast of technological changes that directly effect the learning environment and must continue to provide access to relevant tools. |
| Technological levels of expertise will always vary by individual. | People move through a continuum of technology use. Recognizing this and providing a means for people to move to ever-higher levels of technology use must be a priority of the entire learning community. |

With these beliefs in mind, the technology committee will promote the support and access to educational technology throughout the state in all local AEL programs.

## Technology Goals

The Technology Committee has established the following goals for Missouri AEL programs. Progress toward these goals will be reported to show the results of expenditures and to justify continued funding.

Specific technology goals, detailed by area, include:

**Communication**

- Investigate methods and opportunities to enhance communication between local programs and the state department.
- Assist in communication between teachers and directors to better address technical assistance, support, and training needs/issues.

- ❖ Provide mechanisms to disseminate information about the availability of AEL services to the community.

**Data Collection**

- ❖ Enhance the data collection system to make it more reliable, timely, user-friendly, and accessible to all programs.
- ❖ Utilize a data collection system that allows flexibility in evaluation of site, program, and state focal points.
- ❖ Adhere to National Reporting Standards (NRS).

**Distance Learning**

- ❖ Provide virtual classroom and Internet opportunities to students, teachers, sites, and programs.
- ❖ Create cost-effective distance education systems that meet student learning and staff development needs.

**Educational Technology**

- ❖ Provide hardware that is mobile and securable for both instruction and administration.
- ❖ Select hardware/software that is effective as well as user-friendly.
- ❖ Implement a system to maintain hardware/software for optimal usage and cost-effectiveness.
- ❖ Ensure equity of resources and flexibility among programs.

**Funding**

- ❖ Support a cost-effective technology support system to allow programs to implement, sustain, and effectively utilize technology to enhance learning.
- ❖ Utilize networking opportunities, pilot programs, and other avenues to assist in taking informed risks when purchasing new hardware and software.
- ❖ Aggressively seek outside and/or grant funding opportunities.

**Information Technology**

- ❖ Develop citizens who can use current technologies to access and interpret information from multiple sources.

**Integration of Technology in the Classroom**

- ❖ Provide resources to increase teacher effectiveness.
- ❖ Link the classroom with educational resources within the local, state, and global community to create a collaborative environment that increases the productivity of students as they work toward attaining learning outcomes.

**Staff Development**

- ❖ Implement and maintain a training program that will move teachers along a continuum from non-users to sophisticated integrators and appliers of technology throughout the learning community.

- ❖ Facilitate technology integration within programs by identifying, training, and certifying lead technology teachers within each program.

**Special Populations**

- ❖ Provide practical, cost-effective, and enabling hardware/software to the greatest extent possible.
- ❖ Network with local agencies to enhance opportunities for students.

## Goal Narrative

### Communication

- ❖ Investigate methods and opportunities to enhance communication between local programs and the state department.
- ❖ Assist in communication between teachers and directors to better address technical assistance, support, and training needs/issues.
- ❖ Provide mechanisms to disseminate information about the availability of AEL services to the community.

Communication always has been and always will be of vital importance at the local, state, and national levels. Without effective and ongoing communication, many problems arise. Currently, AEL/DESE utilizes “snail” mail and email to communicate with local AEL programs. It is hoped these communications will continually be improved. Adding links to the MO State Home Page, the AEL/DESE Home Page, the MO AEL Technology Center, the MO AEL Resource Center and the Show-Me Newsletter to the bottom of every email could assist in providing immediate linkages to pertinent information and/or resources. Local AEL directors are encouraged to connect with their staff in similar fashion.

In the future, the feasibility of a statewide intranet needs to be explored. Should an intranet system prove cost-effective and user-friendly, every effort should be made to implement and sustain this vital communication tool. Such an intranet would make communication more readily accessible as everyone would be using the same system and software. Firewall, software compatibility and hardware compatibility issues would no longer be a factor in communication.

### Data Collection

- ❖ Enhance the data collection system to make it more reliable, timely, user-friendly, and accessible to all programs.
- ❖ Utilize a data collection system that allows flexibility in evaluation of site, program, and state focal points.
- ❖ Adhere to National Reporting Standards (NRS).

With the implementation of performance-based funding, data has become increasingly important. Ensuring that data is accurate and matches at both the state and local level is also of vital importance.

While a computer-assisted data collection system has been implemented, the ACES system does not fully address all the needs of local AEL programs. Several errors within the first edition of the program have also added to problems at both the state and local level. As upgrades to ACES are made, it is hoped that the system will become more reliable and user friendly.

The development of a data collection procedure is of utmost importance. The procedure should ensure that all local programs collect data in the same manner and submit data in a timely fashion. Likewise, the state office should release data collection documentation back to local programs in a timely manner. Ensuring that the local database matches the state database would be a much simpler process if both databases were based on the same software program. Continued training in the areas of data entry, software, and the data collection procedure are necessary to ensure reliable, accurate data.

Additionally, the computer-assisted data collection system should document elements of the National Reporting Standards (NRS) as required by the US Department of Education. Reports run at both the local and state level should reflect NRS formatting guidelines. Information on specific standards should be shared with local AEL programs. The importance of data collection should be clearly communicated and shared with AEL programs, directors, and teachers.

## Distance Learning

- Provide virtual classroom and Internet opportunities to students, teachers, sites, and programs.
- Create cost-effective distance education systems that meet student learning and staff development needs.

Although technology plays a key role in the delivery of distance education, teachers must remain focused on instructional outcomes, not the technology of delivery. The key to effective distance education is focusing on the needs of the students, the requirements of the content, and the constraints faced by the teacher. For these reasons, a variety of distance education formats will be made available to students and teachers.

Currently, two opportunities to explore distance education are available to students of local AEL programs. SkillsTutor is a web-based instructional aid that can augment the classroom experience and/or allow students to study on their own time, at their own pace. More information can be found by visiting http://www.skillstutor.com. GED Online is a statewide program geared for higher-level students who are seeking the GED but who cannot attend regular classes. More information can be found by visiting

http://www.gedonlineclass.com. Piloting of additional web-based student educational opportunities is planned.

Staff development components to meet the needs of local AEL teachers and directors will also be addressed. An interactive television in-service was piloted at several local AEL programs in 2000. Enhancement and cultivation of distance education staff development components will be sought during the coming years.

During the 2002 summer certification workshops, local AEL teachers will receive information and sample lessons offered by MarcoPolo. MarcoPolo is a partnership between the WorldCom Foundation, the American Association for the Advancement of Science, the Council of the Great City Schools, the John F. Kennedy Center for the Performing Arts, the National Council of Teachers of Mathematics, the National Council on Economic Education, the National Endowment for the Humanities, and the National Geographic Society. This partnership has created a standards-based K-12 Internet Content for the Classroom that can easily be adapted to fit the needs of adult learners.

## Educational Technology

- Provide hardware that is mobile and securable for both instruction and administration.
- Select hardware/software that is effective as well as user-friendly.
- Implement a system to maintain hardware/software for optimal usage and cost-effectiveness.
- Ensure equity of resources and flexibility among programs.

When technology is used effectively, it is not the object of instruction, but a powerful tool that can provide learning opportunities previously unconsidered. To that end, the Technology Committee supports the infusion of educational technology within local AEL classrooms.

A concerted effort is made to utilize AEL monies to purchase educational technology that is fair, effective, and equitable for all learners, local programs, and MO AEL Technology Center staff. Keeping a standard set of software on a standard set of computers allows better and more cost-effective maintenance and troubleshooting. It also promotes equity of resources among programs. Additionally, it is important to ensure that “special” programs loaded on educational technology equipment do not interfere with the standard software. Continued efforts will be made to research and pilot new technologies to meet the need of students, teachers, administrators, and the state.

### Standards for Equipment

A concerted effort is made to utilize AEL monies to purchase educational technology that is fair and equitable for all learners, local programs, and MO AEL Technology Center staff. Keeping a standard set of software on a standard set of computers allows better and more cost-effective maintenance and troubleshooting. It also promotes

equity of resources among programs. It is important to ensure that additional local software loaded on educational technology equipment does not interfere with the standard software.

Local programs have the freedom to load the software they see fit upon machines purchased or obtained with non-AEL monies. Equipment purchased with AEL monies must meet federal and state guidelines regarding use, serviceability, and compatibility. AEL/DESE-owned software cannot be loaded on non-AEL/DESE-owned computers without prior written approval from the State Director of Adult Education and Literacy or a designee. All AEL/DESE-owned software must be loaded by authorized individuals as indicated within the guidelines of the Missouri AEL Technology Center.

**Software Plan**

*Purchases*

1. AEL/DESE-Owned Software
   These purchases are defined as any software purchase made with state and/or local AEL funds that are distributed to local AEL programs. Software programs that fall under this category include but are not limited to:

   - Plato
   - English Discoveries
   - GED Official Practice Tests
   - Ellis
   - TABS
   - BLS Tutorsystems
   - Oxford Picture Dictionary
   - AutoSkills
   - GED Interactive
   - Human Asset Imaging
   - Reading Horizons
   - PowerPath
   - SkillsBank
   - ACES

2. Local Software
   These purchases are defined as any software purchased with non-AEL funds by local AEL programs.

*Installation and Maintenance*

All AEL/DESE-owned software will be installed and maintained by the MO AEL Technology Center staff. Any problems encountered with AEL/DESE-owned software should be directed to the MO AEL Technology Center staff. No other persons should try to maintain or service AEL/DESE-owned software. Should MO AEL Technology Center staff find evidence that other persons have worked on AEL/DESE-owned software, a fee will be charged to the local AEL program as stated within MO AEL Technology Center guidelines.

The installation of local software purchases will be the responsibility of the local AEL program. Local AEL programs are responsible for the maintenance of all locally purchased software.

*Training and Usage*
All local AEL staff who will be using AEL/DESE-owned software will be required to attend a training designed to teach the user how to utilize the software. Trainings will be offered by the MO AEL Technology Center staff. Local staff development money will cover any costs local AEL staff encounter for the training.

It is the responsibility of the local AEL program to provide training for local software purchases. Local AEL staff will be responsible for the proper usage of all software by students.

**Acceptable Use Policy**
Educational technology equipment is typically purchased with monies earmarked for instruction. For this reason, there are usage restrictions. When equipment is purchased for instruction, applications on the equipment must also be instructional.

Equipment not purchased with monies earmarked for instruction may also be use-restricted. The AEL section of DESE will notify the local program administrator of any such restrictions prior to the equipment being disseminated.

Specific responsibilities/restrictions applicable to all AEL/DESE-owned equipment include:

1) Computer Assisted Instruction (CAI) equipment is on loan to the program. Continued use is contingent upon the degree of equipment utilization and upon timely and proper reporting of required information.

2) Monthly reports as required will be submitted to the state AEL office no later than the fifteenth day of the following month.

3) Equipment will be insured, properly maintained, and fully operational in a secure environment at all times.

4) Software loaded on equipment may be altered only with prior written approval from the State Director of Adult Education and Literacy or a designee.

5) The program administrator will develop a written procedure for inventory, care, and use of equipment to be signed by the teacher responsible for that equipment and by the local program administrator.

6) Equipment earmarked for instructional use can be utilized only for instructional purposes.

7) Local programs which have established learning centers must meet the following additional requirements:

a) Learning centers where learning systems are located must be open a minimum of 19 hours per week.

b) The program must employ an AEL certified teacher(s) other than the director at the site where learning systems are located. To verify technology trained staff are utilized within the learning center, any change in the employment of the teacher will be forwarded in writing to the state AEL office within five (5) working days of the start date of the new teacher.

c) The learning center teacher must attend and complete all required training and maintain those skills as necessary. Training will be completed under the supervision of the MO AEL Technology Center staff.

d) Programs will provide a detailed schedule of the learning center(s) location. Any change to this schedule must be submitted to the state AEL office within five (5) working days of the schedule change.

Additionally, all local programs must respect copyright/licensure restrictions. The local program director is responsible for ensuring that all copyright/licensure restrictions are enforced. If working with software that came with a clearly visible license agreement, or if a registration card is signed, read the license carefully before using the software. Some licenses restrict use to a specific, single computer. Copyright law does not permit software to be run on two or more computers simultaneously unless the license agreement specifically allows it.

Software cannot be copied unless specifically stated within the copyright/license agreement; however, lack of copy protection does not constitute permission to copy software in order to share or sell it. Non-copy-protected software enables the owner to protect their investment by making a back-up copy only. For no other reason can the software be copied.

Additional information on copyright can be found later within this document.

**Copyright**
Unauthorized copying of items by individuals can harm the entire academic community. Respect for intellectual labor and creativity is vital to academic pursuits. This principle applies to works of all authors and publishers in all mediums. It encompasses respect for the right to acknowledgment, right to privacy, and right to determine the form, manner, and terms of publication and distribution. The technological ability to copy works does not include the legal right to do so.

It is the intent of AEL/DESE to delineate, enforce, and abide by the provisions of current copyright laws as they affect local AEL programs. Copyrighted materials, whether they are print or non-print, should not be duplicated unless such reproduction meets “fair use” standards, or unless written permission from the copyright holder has been received. AEL/DESE does not sanction illegal duplication in any form. Programs who

willfully disregard AEL/DESE's copyright position are in violation of state policy; they do so at their own risk and assume all liability.

"Fair use" Guidelines affecting local AEL programs include:

I. Books And Periodicals
When the inspiration and decision to use a work and the moment of use are so closely related it would be unreasonable to expect a timely response from the copyright holder, a teacher may make copies providing they follow all guidelines. A teacher, for the purpose of scholarly research, preparation to teach a class, or use in teaching, may copy items as follows:

A. A single copy may be made according to the following guidelines.
   1. A chapter from a book.
   2. An article from a periodical or newspaper (complete article story or essay of less than 2,500 words).
   3. A "short" story, essay, or poem (no more than 250 words from a poem; 10% or up to 1,000 words of a prose work, whichever is shorter).
   4. One illustration from a book, periodical, or newspaper such as:
      - A cartoon
      - A chart
      - A diagram
      - A drawing
      - A graph
      - A picture

B. Multiple copies for classroom use may be made if the following conditions are met.
   1. Copying is allowed for one class term, only.
   2. The number of copies cannot exceed the number of students in a class.
   3. Copying is allowed for one course during one class term only.
   4. No more than one "short" poem, article, essay, or story, or two excerpts may be copied from works by the same author.
   5. The individual teacher must initiate copying.
   6. Each copy must include a notice of copyright.

C. Copying shall not:
   1. Substitute for the purchase of books, publisher's reprints, or periodicals.
   2. Be directed by a higher authority.
   3. Be repeated with respect of the same time by the same instructor from term to term.
   4. Be made without including a copyright notice.
   5. No charge may be made to a student beyond the actual cost of photocopying.
   6. No copying from works intended to be "consumable", e.g. workbooks, standardized tests, is allowed.

7. No copying to create anthologies, or collective works or compilations, or to replace or substitute for them is allowed.

II. Software
   A. Classroom/administrative use guidelines:
      1. Observe license terms and restrictions (use of the product constitutes your acceptance of the terms and conditions of the agreement).
      2. Single program ownership - may use on one unit at any one time.
      3. Copyright notice should appear on software label.
      4. Post a warning label on computer units such as: “Computer programs are protected by copyright. Unauthorized copying may be prohibited by law.”

III. Videotapes
   A. Classroom use requirements for performance or display:
      1. Must be used by a teacher (guest lecturer) or students.
      2. Must be used in face-to-face instructional activities (not as a filler or motivator).
      3. The entire audience must be involved with the teaching activity and in the same room or general area.
      4. Viewing must take place in a classroom or similar place devoted to instruction.
      5. The videotape being utilized must have been lawfully made.

**Maintenance and Support**
The maintenance and support of AEL/DESE-owned software and equipment is handled by the MO AEL Technology Center.

*AEL/DESE-owned equipment:*
MO AEL Technology Center staff is authorized to provide maintenance and/or to repair equipment bearing a state AEL/DESE identification tag. Equipment that does not bear a state AEL/DESE identification tag will not be maintained and/or repaired by Technology Center staff.

Regular maintenance includes replacing hard drives, sound cards, and/or network cards. The cost of the item will be billed to the local AEL program. Maintenance is free of charge as long as no unapproved software programs have been loaded on the equipment/network. If additional program(s) are found on the equipment/network, charges are assessed at an hourly rate.

An hourly rate will be charged if:

1) Additional software programs placed on equipment are found to have caused the failure of the equipment to operate.

2) Local schools/agencies, computer technicians or other individuals change settings, alter configurations, etc. Charges will be incurred by the local AEL program to bring the system back to original specifications/configuration.

A request for special permission to load other software on computers must be submitted to the state AEL office. The request will be reviewed and a letter of authorization will be written if approval is given. Only the MO AEL Technology Center staff is authorized to load software on AEL/DESE-owned computers.

Note: If during a team evaluation, site visit, inventory check, or technology training, unauthorized software is found on AEL/DESE-owned equipment, the software will be deleted. The deleted type of software and the site will be reported to the state AEL office. If, on a second review, unauthorized software is again found on AEL/DESE-owned equipment, the equipment will be removed and reissued to another program.

*Non-AEL/DESE-owned equipment:*
Local programs are responsible for all costs associated with maintenance and repair of non-AEL/DESE-owned equipment. Equipment falling into this category includes, but is not limited to:

- Surplussed equipment.
- Gift equipment.
- Locally owned equipment.

No AEL/DESE-owned software may be loaded on non-AEL/DESE-owned equipment without written authorization from the state AEL office. Only MO AEL Technology Center staff will be permitted to install AEL/DESE-owned software.

*Replacement and upgrade of AEL/DESE-owned equipment:*
In an effort to reduce the inventory of equipment not covered by a service agreement, to improve the quality of equipment, and to maintain the usability of AEL/DESE-owned equipment, a Technology Replacement Plan is being developed. As part of the plan, all new AEL/DESE-owned equipment will include a minimum three (3) year service agreement in the purchase price. Monies will be set aside each year to upgrade/replace a portion of the AEL/DESE-owned equipment not currently under a service agreement.

**Gifts and Disposal**
Local AEL programs are encouraged to accept donations of hardware and software to augment the existing resources of the program. It is the responsibility of the local AEL program to maintain all donated equipment, including surplussed equipment. Before accepting donated equipment and/or software, local AEL programs are encouraged to determine the compatibility and usability of the equipment/software. Accepting donated equipment and/or software that will not assist the students and/or staff of the local AEL program can be foolhardy.

When donated equipment and/or software are no longer of practical use, it is the responsibility of the local program to dispose of the equipment/software properly.

## Funding

- ❖ Support a cost-effective technology support system to allow programs to implement, sustain, and effectively utilize technology to enhance learning.
- ❖ Utilize networking opportunities, pilot programs, and other avenues to assist in taking informed risks when purchasing new hardware and software.
- ❖ Aggressively seek outside and/or grant funding opportunities.

Missouri AEL is committed to providing a long-term financial plan that provides students and teachers with suitable technology to support learning and, at the same time, protects the state's investment. Missouri AEL understands that responding to the financial challenges presented by the need to make technology available to students and local programs is multifaceted. This challenge includes the initial purchase of equipment, providing ongoing training in the use of equipment and software, detailing instructional strategies for integrating technology into the curriculum, and developing a comprehensive plan to upgrade and replace both software and hardware as required by obsolescence and growth.

**Funding Opportunities**
Local AEL programs are encouraged to augment existing resources by securing additional funding. Funding sources to explore include, but are not limited to:

Agency Resources:
- Missouri Association for Philanthropy. Telephone: 314-621-6220, e-mail: map@mapstl.org. This organization has a large library of funders for any need and is located in the St. Louis area.

Internet Resources:
- National Institute for Family Literacy (NIFL). Located at: http://www.nifl.gov. Provides information on multiple grant opportunities for all aspects of AEL.
- U.S. Government Grants. Located at: http://www.ed.gov/GrantApps. Provides information on multiple grant opportunities for all aspects of AEL.
- HEC Reading Horizons. Located at: http://intensivephonics.com. This site is searchable by state. Provides information on funders that have previously provided monies to purchase the HEC Reading Horizons software.

Publication Resources:
- Foundation Center. Address: 79 Fifth Avenue, New York, NY 10003. Searchable CD-ROM database for national and international funding sources can be purchased. May also be available at local libraries.
- Corporate Funders Operating in Missouri by E. Jane Rutter, Editor and President, Grants Link, Inc. Address: 601 W. Nifong Blvd., Suite 5B, Columbia,

MO 65203-6804. Telephone: 1-800-396-8829. This book contains a list of funders who are active in Missouri.

## Information Technology

- Develop citizens who can use current technologies to access and interpret information from multiple sources.

The Technology Committee recognizes that mere access to information is no guarantee that learning will occur. However, committee members know that development of methods to gather information through technology and to organize, synthesize, and assimilate information with the help of technology tools must be an important goal in facilitating the education of local AEL students.

The committee envisions a learning environment where all learners have access to a variety of information sources. This information by itself is of limited value, but when incorporated into an engaged learning process, it becomes a powerful catalyst for understanding and further exploration.

## Integration of Technology in the Classroom

- Provide resources to increase teacher effectiveness.
- Link the classroom with educational resources within the local, state, and global community to create a collaborative environment that increases the productivity of students as they work toward attaining learning outcomes.

The use of technology enables teachers to implement new teaching techniques, to help students work collaboratively and develop higher-order thinking skills, to encourage students to be engaged in the learning process, to assist students who have various learning styles and special needs, and to expose students to a broad range of information and experts.

Before technology can be integrated into the classroom, teachers must identify the purpose of technology. Teachers should view technology as another tool to teach students. Technology can enhance learning by providing exciting material to reinforce what is being taught. Technology can improve student learning by providing different avenues for students to explore. Technology can also assist in addressing different learning styles within a classroom. Technology should be used, not for its own sake, but to enhance student outcomes and increase the teacher's performance.

### Integrating Technology into the AEL Classroom

Adult learners often have learning styles that do not match teaching styles in the typical high school classroom. Tactile/kinesthetic learners need to use their hands in order to learn; auditory/visual learners need to hear/see in order to learn. Computer programs can address these alternative learning styles by reinforcing classroom instruction

through the use of headphones and keyboards, allowing auditory, visual, and tactile learners to improve more quickly and to progress at their own speed.

Auditory/visual students learn more easily when they hear the words as they read. Computers, books on tape, and videotapes can help them learn more easily. Tactile/kinesthetic learners, dyslexics, and physically handicapped students can benefit by writing essays on computers.

Internet educational experiences can reach students in class and at home. Students are more likely to use this technology if they can be trained in its use in the classroom. Internet skills can also help students with job searches.

Many high school students enroll in a keyboarding class that qualifies them for entry-level jobs requiring minimal computer skills. Because AEL graduates must compete with high school graduates for jobs, it is important for AEL graduates to develop computer competencies.

Televisions and VCR's introduce students to science, social studies, biography, and literature more vividly for many students than words on a page. Historical events can be viewed and/or monitored through news reports. The classroom teacher can use the opportunity to supplement news events with lessons in geography, history, economics, and biographical sketches.

CD-ROM educational games can enhance critical thinking skills. Simulation games, which place the user in the position of decision-maker in an historical situation, can make a lasing impact on many learners.

**Integrating Technology into an ESL Curriculum**

The needs, goals, and objectives of ESL students vary widely and may differ from those of other adult students. Some ESL students need basic literacy skills while others want to master the language to pursue higher education; some are illiterate in their native language while other are highly educated. Technology in the ESL classroom makes it possible to help students achieve their goals and to become a more resourceful, accomplished, efficient, and successful member of the community.

ESL students need to feel that they are an integral part of our complex, technological society. They need to be technologically literate as well as English literate. Technological competence provides them with the security and confidence that they are valued members of our society. No matter what they wish to accomplish in our classes, they need to recognize that technology will be a part of their lives after they leave us.

The successful use of technology includes keyboarding skills, using a PC, and navigating through the World Wide Web. It also includes understanding how to use a VCR, a microwave or a cell phone. Bringing everyday household items, such as VCRs or cell phones, into ESL classes, then teaching with instruction manuals provides the skills and competencies for ESL students to manage their lives at home.

Whether a classroom has access to a single laptop or stand-alone unit or to a computer lab, the teacher must be responsible for conveying the message that these are expensive machines requiring proper care. Learning to correctly turn the computer and monitor on and off will ensure the longevity of the hardware.

Familiarity with Windows software is not only helpful in today's society, it is a necessity. Icons and the language of Windows need to be taught before a student actually sits down in front of a Mac or PC. Teaching icons and their meanings with the use of an overhead or individual handouts is a great in class activity.

Students also learn at different levels and rates. Many of the ESL textbooks are now available on CD-ROM. Grammar texts, picture dictionaries and idiom books used for classroom instruction are limited in that they teach to the same level and at the same pace. They provide a good foundation for learning the material, but CD-ROMs can be used as supplements to further the students' understanding of how the material translates into everyday communication. CD-ROMs put the learner in control of how he or she learns, not the teacher. The student may go at his or her own pace and delve more deeply into a specific area that he or she is interested in, or having trouble with.

Pronunciation for ESL students can be incredibly difficult and discouraging. With the real possibility of widespread, voice-activated technology being utilized in the near future, it should be assumed that these voice recognition systems would be culturally biased to recognize the voice of native English speakers. It is vital that all ESL software programs have a speaking component to allow the student to record his or her own voice and to compare it to the pronunciation of a native speaker. All computers should have headphones with microphones. Pronunciation software is a great help to teachers who cannot move around a classroom to correct the pronunciation of twenty different students with different pronunciation difficulties.

The virtual classroom helps connect the student to the world in which he lives. Internet access is especially important for ESL students because they can quickly and easily access vital information about their community. The Internet can also be used to locate forums where non-native speakers can communicate with other non-native speakers who might be facing the same difficulties. It is also a tool for learning the culture in which they live.

Common technological tools such as VCR's, tape recorders and overhead projectors should also be utilized in ESL classes. Listening exercises where the speakers use everyday English, idioms, and slang are particularly helpful to advanced ESL students who are trying to differentiate between the formal grammar used in writing, and everyday spoken language.

**Integrating Technology into an Institutional Setting**

Institutionalized students have needs that differ from those of non-institutionalized students. Students in these settings are mandated to attend classes until they are

release or have obtained a GED. They have a wide range of goals and motivations: non-readers want to become functionally literate; low-level readers wish to improve their reading skills; high school dropouts wish to obtain a GED. To meet this range of needs and objectives, the modes and options for obtaining knowledge and skills must be varied. Technology can help institutionalized students become more resourceful, accomplished, efficient, and successful learners. It can also provide motivation to improve their skills, knowledge, and self-esteem – important achievements needed to succeed in their environment.

The vast majority of institutionalized adult learners will return to society. It is therefore necessary for them to recognize that technology will be a part of their lives upon release. To successfully function in today's society, citizens must have basic technological skills. Providing technological skills and competencies to these students will improve their quality of life during and after confinement.

By helping students use technology, the teacher takes ownership in showing the student the importance of technology, the expense of the machines used, and the need for proper care. For instance, learning the proper way to turn on and off a computer is vital in ensuring the longevity of the hardware.

All learning styles can be enhanced with the use of technology. This allows individual learning styles to be used to optimize the learning process. Students also learn at different rates. Grammar texts, picture dictionaries, and idiom books used for classroom instruction are limited in that they teach to the same level and at the same pace. They do provide a good foundation for learning the materials but use of technology such as CDROM, scientific calculators, and audio/visual equipment can be used as supplemental instruction to further the students' understanding of the material. This also allows the student to take control of their education by allowing them to move at their own pace and use their particular learning styles to achieve advancement.

Technology can enhance the levels of literacy from non-readers through those who need GED preparation. Using computer-assisted instruction in addition to more traditional resources gives students a full-service opportunity to achieve their goals and to achieve success.

**Integrating Technology into Literacy Components**

Across Missouri, most AEL programs offer basic literacy programs and deliver them to clients through the use of trained volunteers who work one-on-one with qualified clients. The linchpin of this program is the well trained and well-intentioned volunteer whose services cannot be replaced; however, it has become increasingly obvious that the efforts of volunteers can be significantly enhanced by the use of appropriate technology.

Technology covers a broad area, including effective software programs, audio-visual aids, and videos for beginning reading and numeracy students. The value of such programs is that they offer much-needed review and reinforcement to the beginning literacy student. The contact between volunteer and student is usually limited to twice-

weekly meetings and, as indispensable as these are, the student's progress truly depends on significant review of the skills taught in tutoring sessions. Good software programs serve this important purpose by allowing the student to spend time reinforcing skills presented in tutoring sessions. For instance, some portion of a literacy session with a beginning reader is usually devoted to the introduction and practice of the many phonics skills necessary to the mastery of reading. Similarly, the innumerate can profit from videos and software that reinforce basic mathematics skills such as carrying and borrowing. The time required to truly master such skills and to begin using them to improve word recognition requires much more time than can be offered in a typical tutoring session.

Good software programs that present a clear and well-organized treatment of these important skills are invaluable for two reasons: 1) they offer an internally consistent and carefully-presented treatment of these topics and allow the student to move through the program at his or her own pace; and 2) they offer both the student and the tutor an objective assessment of the student's progress, giving the student a clear picture of what has been mastered and what needs further practice and review. One of the crucial determinants of student progress in literacy is the variable of time spent on a task. A good software program gives the student the opportunity to continually review and master skills that require a degree of over-learning, *i.e.* drill. This relieves the student/tutor sessions of the full burden of addressing this necessary but often tedious task. Tutor/student sessions may then see a shift to activities focused more on improving reading fluency and comprehension.

Literacy students who do not thrive under the system of one-on-one tutoring may find the software path to literacy more congenial and effective. They may feel a greater sense of independence and accomplishment by going through a program on their own with the supervision, guidance, and approval of an instructor. It gives such students the opportunity of using literacy services in a different way. Literacy software programs may also be effective for programs that face the quandary of serving a growing student population with an insufficient number of qualified volunteers.

Literacy technology will only be effective if it increases the efficiency through which students acquire literacy skills. Even the best software program is only as good as the student's commitment to it. Any software should be carefully reviewed for its effectiveness. If it has a record of attracting and maintaining student interest and if clear progress can be demonstrated, then it is valuable as an essential component of a literacy program.

## Staff Development

- Implement and maintain a training program that will move teachers along a continuum from non-users to sophisticated integrators and appliers of technology throughout the learning community.
- Facilitate technology integration within programs by identifying, training, and certifying lead technology teachers within each program.

Research indicates that a well-planned, ongoing professional development program that is tied to curriculum goals, designed with built-in evaluation, and sustained by adequate financial and staff support is essential if teachers are to use technology appropriately to promote learning for students within the AEL classroom. State AEL staff and committee members believe that the key to successful implementation of this technology plan is well-trained teachers who understand how to use the technology available to them, how that technology relates to the learning environment created within the classroom, and how to integrate technology to meet the learner's educational needs.

**MO AEL Technology Center**

Technology itself does not guarantee improvements in learning, but when coupled with powerful teaching strategies, it can contribute to significant learning gains. The Technology Committee promotes the MO AEL Technology Center as the provider of choice to help AEL instructors develop skills in working with technology and in utilizing technology in their classrooms.

The MO AEL Technology Center is a grant-funded entity. The MO AEL Technology Center provides technical training and assistance to local AEL programs throughout the state of Missouri. The Technology Center staff also assists state AEL staff by auditing inventory and conducting software spot checks.

**Technology Training**

In order to maintain an effective technology program for local AEL programs, AEL certified teachers employed at class sites with technology equipment must attend and complete all required training to maintain those skills as necessary. Training will be completed under the supervision of the MO AEL Technology Center staff. It is believed that the time and money spent on the human infrastructure assures more effective use of technology equipment/educational software and fewer technological problems within the AEL classroom.

Types of training available:

- Beginning/Advanced Instructional software training (e.g. SkillsBank and BLS)
- Administrative software training (e.g. ACES and TABS)
- Computer skill training (e.g. How to Use the Hardware)
- Lead Technology Teacher Training
- Basic Troubleshooting/Maintenance
- Customized training to address specific needs*

* Requires prior authorization from AEL/DESE staff.

Specific training sessions and descriptions can be obtained from the MO AEL Technology Center. Staff development stipends for technology trainings should be paid according to state AEL guidelines from local professional development funds.

**Lead Technology Teacher**
In an effort to facilitate technology integration within programs, the Technology Committee proposes to identify, train, and certify lead technology teachers within each program. Lead Technology Teachers will assist local programs in many ways. By incorporating Lead Technology Teachers, the number of hours and trips Technology Trainers make to local programs will be reduced, thereby reducing costs. Additionally, having someone available locally will increase response time when problems/questions arise.

The qualifications and duties of a Lead Technology Teacher include:

Qualifications:
- AEL Certified.
- Working knowledge of AEL supported hardware/software (both administrative and instructional).
- Attendance and completion of all training sessions available through the MO AEL Technology Center and maintain those skills as necessary.
- Demonstrated proficiency after completing training sessions.
- Good communication skills.

Duties:
- Serve as a liaison between the local program and the MO AEL Technology Center staff.
- Provide program specific training for volunteers and aides at the local level.
- Perform basic maintenance procedures as directed by MO AEL Technology Center staff.
- Provide guidance and support to local program teachers as needed.
- Coordinate report collection and dissemination.
- Other duties as assigned.

Upon completion of all required training sessions and demonstration of proficiency, Lead Technology Teachers will be officially recognized. Lead Technology Teachers will receive an identification number and a frameable certificate signed by the State Director of Adult Education and Literacy.

## Special Populations

- ❖ Provide practical, cost-effective, and enabling hardware/software to the greatest extent possible.
- ❖ Network with local agencies to enhance opportunities for students.

Missouri AEL serves many special populations. These populations include, but are not limited to, physically disabled adults, adults with learning problems, institutionalized adults, and non-native speaking adults. Each of these populations has special needs offered by technology. Additionally, each population will utilize technology differently.

**Physically Disabled Adults**
As more physically disabled adults enter the AEL classroom, it will become increasingly important to provide adaptive equipment. It is planned to establish a lending library of adaptive equipment to be housed within the MO AEL Technology Center. This equipment will include devices in the areas of telephony, computer data and sound, print materials, and aural communication. This equipment will be available for checkout by local AEL programs.

**Adults with Learning Problems**
Many adults enter the AEL classroom with suspected learning problems. Individuals 16 to 22 can receive diagnostic testing from the local school district. However, those over 22 must pay for diagnostic services to document a learning disability. In an effort to assist adults who have suspected learning problems, Missouri AEL has incorporated the use of PowerPath. This software program will allow a trained teacher to develop strategies to improve learning for an adult. Each program within the state will have at least one PowerPath system as well as at least one PowerPath trained teacher.

PowerPath is an intake, diagnostic screening, and intervention system for basic skill programs. PowerPath screens for learning differences and defines how each person can most effectively learn. PowerPath screens for information processing, attention difficulties, and scotopic sensitivity problems.

**Institutionalized Adults**
Institutionalized adults fall into several categories. Some institutionalized adults are in corrective institutions, while others are in nursing homes or group homes. Others may be in diagnostic facilities or life skills centers. Each entity has its own rules for bringing in and utilizing technology.

Corrective institutions may or may not allow technology within their walls. Typically, there is no access to the Internet at corrective institutions. Security at corrective institutions is of utmost importance. Before planning to utilize technology within the corrective setting, check with the supervising entity.

The other categories of institutionalized adults can benefit from the use of technology. Software programs can provide drill and practice in a “new” format that often excites these adults. Utilizing technology can prove motivational for adults with limited contact with the outside world.

**Non-Native Speaking Adults**
Non-Native speaking adults, or ESL Adults, enter our classrooms in order to accomplish a wide variety of goals. Whatever the specific goal, it is self-improvement and acceptance within the community they are seeking. Technology in an ESL setting needs to be available for all forms of self-improvement.

New technologies and software that provide feedback on pronunciation need to be utilized for those students who are proficient in English comprehension yet are self-

conscious about their ability to be understood. New software that provides helpful cultural clues to successful living in an American community can be a less stressful and more dignified approach to learning for the student, as well as the teacher, e.g. personal hygiene, acceptable personal space, etc.

## Equipment Inventory

Currently, AEL/DESE-owned equipment with corresponding software distributed among local AEL programs includes:

- 118 Plato systems,
- 153 Gateway laptops,
- 6 Plato stand-alones,
- 50 Dell laptops, and
- 44 ACES computers.

Local AEL programs may have additional classifications of equipment on their individual inventory list.

## Needs Assessment

When making equipment-purchasing recommendations, priority is given to local AEL programs without any equipment/software. Second priority is given to replacing/upgrading dated systems. Thereafter, priority is determined on a first come, first served basis.

When making software-purchasing recommendations, information is sought from local AEL staff. The Technology Committee has recommended the establishment of a Piloting Fund to ensure software purchases meet the needs of students and teachers within the state. This fund will be used to purchase a small number of copies of recommended software to be utilized within selected local AEL programs. The local AEL programs will be asked to keep detailed reports on student use, student progress, user friendliness, teacher friendliness, etc. of the software being piloted. Comparison of outcomes will assist the Technology Committee in making recommendations for purchase.

## Action Plan

In order to accomplish our goals, an action plan has been developed. The action plan is detailed on the following pages.

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Communication | Investigate methods and opportunities to enhance communication between local programs and the state department. | Research the feasibility of a statewide AEL intranet by June 30, 2003. | Obtain and review information from other entities (public and private) that have an established intranet. | Technology Committee |
| | Assist in communication between teachers and directors to better address technical assistance, support, and training needs/issues. | Provide ongoing funding for local AEL programs to provide communicative technology at local sites by July 1, 2002. | Allocate monies for cell phones, Internet access, etc., as allowable expenditures. | AEL/DESE |
| | | Encourage AEL teachers to set up and utilize an email account to facilitate communication by September 30, 2002. | Inform teachers of the availability of free email accounts. | MO AEL Resource Center |
| | | Explore the utilization of a listserv for local AEL teachers within the state by June 30, 2003. | Establish an e-group and encourage participation. | MO AEL Technology Center |
| | Provide mechanisms to disseminate information about the availability of AEL services to the community. | Develop a list of AEL program websites, publish those links on the DESE homepage, and verify links quarterly or as needed by September 30, 2002. | Obtain a list of AEL websites, link to the websites from the DESE homepage, and verify links. | AEL/DESE |
| | | Provide ongoing funding for local AEL programs to establish and maintain a web presence by December 30, 2002. | Allocate monies for web page development, establishment, and maintenance as allowable expenditures. | AEL/DESE |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Data Collection | Enhance the data collection system to make it more reliable, timely, user-friendly, and accessible to all programs. | Determine one database that can be utilized by both the state and local programs for data collection and reporting by August 31, 2002. | Convert the DESE database to an ACES compatible database so report formatting is identical. | AEL/DESE |
| | | Establish deadlines for submission of data by local programs to the state by August 31, 2002. | Publish a schedule requiring local programs to submit data at least monthly by the last working day of the month. | AEL/DESE and Local AEL Programs |
| | | | Provide local programs with a printed report by the 15th of the following month. | AEL/DESE |
| | | Provide Access training to all local AEL data collection staff by December 31, 2002. | Develop, schedule, and present Access training to local programs. | MO AEL Technology Center |
| | Utilize a data collection system that allows flexibility in evaluation of site, program, and state focal points. | Upgrade ACES reports to include 1) a test report that shows pre-tests, post-tests, and progress; 2) a way to print single page reports; and 3) expand the student, class site, and program reports to include enrollment date, multiple class site enrollments, pre- and post-test levels, termination date, and cumulative hours by August 31, 2002. | Upgrade ACES reports to include 1) a test report that shows pre-tests, post-tests, and progress; 2) a way to print single page reports; and 3) expand the student, class site, and program reports to include enrollment date, multiple class site enrollments, pre- and post-test levels, termination date, and cumulative hours. | IT/DESE, AEL/DESE, and MO AEL Technology Center |
| | Adhere to National Reporting Standards (NRS). | Ensure ACES contains all necessary components needed to meet NRS guidelines by August 30, 2002. | Review NRS guidelines and make necessary changes to ACES. | AEL/DESE and IT/DESE |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Distance Learning | Provide virtual classroom and Internet opportunities to students, teachers, sites, and programs. | Provide ongoing funding to local AEL programs to access the Internet by July 1, 2002. | Allocate monies for Internet service as allowable expenditures. | AEL/DESE |
| | | Incorporate ongoing training on utilizing multimedia components within the classroom during certification workshops by July 1, 2002. | Promote and demonstrate MarcoPolo and other multimedia instructional aids during training sessions. | MO AEL Resource Center |
| | | Research the economic feasibility of establishing and maintaining a dedicated server for AEL online activities by June 30, 2003. | Obtain and review information from other entities (public and private) that have a dedicated server. | Technology Committee |
| | Create cost-effective distance education systems that meet student learning and staff development needs. | Utilize the AEL intranet to deliver staff development sessions by June 30, 2005. | Offer staff development sessions via the intranet. | AEL/DESE and MO AEL Resource Center |
| | | Enhance GED Online by adding classrooms by June 30, 2004. | Fund additional classrooms through GED Online. Target number of classrooms is 1/3 of the funded AEL programs. | AEL/DESE and GED Online Staff |
| | | Determine the most cost-effective and user-friendly online delivery computer-assisted instruction curriculum by June 30, 2004. | Review information and pilot online delivery computer-assisted instruction curriculum. | AEL/DESE, Technology Committee and Pilot Sites |
| | | Provide ongoing funding for local AEL programs utilizing the selected online computer-assisted instruction curriculum by June 30, 2005. | Allocate monies for online computer-assisted instruction curriculum as allowable expenditures. | AEL/DESE |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Educational Technology | Provide hardware that is mobile and securable for both instruction and administration. | Provide laptops for instructional use at local AEL programs/sites by June 30, 2005. | Fund laptop upgrade/replacement on a 3-year cycle. | AEL/DESE and MO AEL Technology Center |
| | | Provide laptops for administrative use at local AEL programs by June 30, 2005. | Fund laptop upgrade/replacement on a 3-year cycle. | AEL/DESE and MO AEL Technology Center |
| | Select hardware/software that is effective as well as user-friendly. | Continually pilot hardware/software before making purchasing decisions by June 30, 2005. | Establish a procedure for utilizing piloting groups to preview hardware/software. | AEL/DESE and Technology Committee |
| | | | Utilize piloting groups when making purchasing decisions. | AEL/DESE and Technology Committee |
| | | Provide ongoing funding to support the piloting initiatives by June 30, 2005. | Establish a fund to enable the piloting of new hardware/software. | AEL/DESE |
| | Implement a system to maintain hardware/software for optimal usage and cost-effectiveness. | Continually orchestrate group purchases of hardware/software by June 30, 2005. | Establish a procedure to make group purchases of hardware/software. | AEL/DESE and MO AEL Technology Center |
| | | Develop and implement a technology replacement plan by September 30, 2002. | Develop and implement a technology replacement plan earmarking 33% upgrade/replacement annually. | AEL/DESE |
| | | | Purchase equipment with 3-year service agreements. | AEL/DESE, Local AEL Programs |
| | Ensure equity of resources and flexibility among programs. | Provide ongoing and continued funding opportunities for local programs in order to purchase hardware/software by June 30, 2003. | Fund instructional hardware/ software purchases for all programs. | AEL/DESE |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Funding | Support a cost-effective technology support system to allow programs to implement, sustain, and effectively utilize technology to enhance learning. | Provide continued, ongoing, and additional funding for the MO AEL Technology Center by June 30, 2005. | Provide continued, ongoing, and additional funding for the MO AEL Technology Center. | AEL/DESE |
| | | Implement the utilization of lead technology teachers by July 1, 2003. | Establish the procedure for training and AEL recognition. | AEL/DESE, Technology Committee, and MO AEL Technology Center |
| | Utilize networking opportunities, pilot programs, and other avenues to assist in taking informed risks when purchasing new hardware and software. | Provide ongoing funding to support the piloting initiatives by June 30, 2005. | Establish a fund to enable the piloting of new hardware/software. | AEL/DESE |
| | | Utilize the AEL intranet to provide statewide input on purchasing decisions by June 30, 2005. | Utilize the AEL intranet and encourage participation. | AEL/DESE and Technology Committee |
| | | Utilize the listserv for local AEL teachers to solicit input on purchasing decisions by June 30, 2003. | Utilize the e-group and encourage participation. | AEL/DESE, Technology Committee, and MO AEL Technology Center |
| | Aggressively seek outside and/or grant funding opportunities. | Continually disseminate information regarding funding opportunities to local AEL programs by June 30, 2005. | Obtain and disseminate information on grant opportunities. | AEL/DESE and MO AEL Technology Center |
| | | Actively solicit outside funding from business and industry at the local level to provide funding for technology by June 30, 2005. | Contact area business and industry leaders to ask for funding. | Local AEL Directors and Teachers |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Information Technology | Develop citizens who can use current technologies to access and interpret information from multiple sources. | Incorporate ongoing training on utilizing multimedia components within the classroom during certification workshops by June 30, 2005. | Promote and demonstrate multimedia instructional aids during training sessions. | MO AEL Resource Center |
| | | Provide continued, ongoing, and additional training opportunities on specific technologies by June 30, 2005. | Provide continued, ongoing, and additional training to local programs on specific technologies. | AEL/DESE |
| | | Provide laptops for instructional use at local AEL programs/sites by June 30, 2005. | Utilize high quality computer-assisted instructional software. | AEL/DESE and MO AEL Technology Center |
| | | Incorporate technology basic skills standards into the AEL curriculum by June 30, 2005. | Adapt national technology standards to fit Missouri AEL. | AEL/DESE and Technology Committee |
| | | | Incorporate adapted technology standards into Missouri AEL curriculum. | MO AEL Technology Center, MO AEL Resource Center, Local AEL Programs |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Integration of Technology in the Classroom | Provide resources to increase teacher effectiveness. | Expand classroom tools for instruction and learning by June 30, 2004. | Establish a fund to enable the piloting of new hardware/software. | AEL/DESE, Technology Committee, and MO AEL Resource Center |
| | | Provide for the integration of multiple resources for existing and emerging curriculum by June 30, 2005. | Establish a fund to enable the piloting of new hardware/software. | AEL/DESE and Local AEL Programs |
| | | Enable the instructional community to communicate more effectively, access, and process information, and work productively by June 30, 2004. | Utilize the AEL intranet and encourage participation. | AEL/DESE and Technology Committee |
| | | Enable learning to involve partnerships within programs, across the state, and among other organizations by June 30, 2005. | Utilize the AEL intranet and encourage participation. | AEL/DESE and Local AEL Programs |
| | Link the classroom with educational resources within the local, state, and global community to create a collaborative environment that increases the productivity of students as they work toward attaining learning outcomes. | Provide ongoing funding for local AEL programs to provide communicative technology at local sites by July 1, 2002. | Allocate monies for cell phones, Internet access, etc., as allowable expenditures. | AEL/DESE |
| | | Utilize the AEL intranet to link programs within the state by June 30, 2005. | Utilize the AEL intranet and encourage participation. | AEL/DESE and Local AEL Programs |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Staff Development | Implement and maintain a training program that will move teachers along a continuum from non-users to sophisticated integrators and appliers of technology throughout the learning community. | Provide continued, ongoing, and additional funding for the MO AEL Technology Center by June 30, 2005. | Provide continued, ongoing, and additional funding for the MO AEL Technology Center. | AEL/DESE |
| | | Provide continued, ongoing, and additional training opportunities on specific technologies by June 30, 2005. | Provide continued, ongoing, and additional training to local programs on specific technologies. | AEL/DESE and MO AEL Technology Center |
| | Facilitate technology integration within programs by identifying, training, and certifying lead technology teachers within each program. | Delineate the lead technology teacher training/certification process by December 30, 2002. | Develop the criteria, responsibilities, etc. associated with the lead technology teacher position. | AEL/DESE, MO AEL Technology Center, and Technology Committee |
| | | Implement and sustain the lead technology teacher training/ certification process by July 1, 2003. | Begin the lead technology teacher training/certification process. | AEL/DESE, MO AEL Technology Center, and Local AEL Programs |

| Area | Goal | Objective | Activity | Responsibility |
|---|---|---|---|---|
| Special Populations | Provide practical, cost-effective, and enabling hardware/software to the greatest extent possible. | Establish a lending library of assistive technology for MO AEL programs by June 30, 2003. | Purchase assistive technology and make available for checkout. | AEL/DESE and MO AEL Technology Center |
| | | Provide ongoing funding to support the piloting initiatives by June 30, 2005. | Establish a fund to enable the piloting of assistive technologies. | AEL/DESE |
| | Network with local agencies to enhance opportunities for students. | Actively encourage and solicit referrals from local organizations working with special populations by August 30, 2002. | Develop and have available a local listing of agencies and organizations that serve the needs of special populations. | Local AEL Programs |
| | | | Update the list as needed. | Local AEL Programs |
| | | Explore the utilization of a listserv for local AEL teachers within the state by June 30, 2003. | Establish an e-group and encourage participation. | MO AEL Technology Center |
| | | Coordinate training opportunities with other entities that provide access to training in working with other populations by July 1, 2003. | Work with the Division of Youth Services and the Department of Corrections to schedule special training on dealing with difficult populations. | AEL/DESE |

## Evaluation

The goal of the MO AEL State Technology Plan is to bring rich information resources to AEL classrooms to support other types of learning. The ongoing evaluation of technology applications and student achievement to ensure that the technology is appropriate, adaptable, and useful is of primary importance to the Technology Committee and to state AEL staff.

The Technology Committee recommends that multiple quantitative and qualitative evaluation measures be utilized to document learning outcomes. These data will be synthesized to ensure selection of the most appropriate technology to meet the needs of students and teachers.

State AEL staff will also utilize built-in assessment/evaluation tools to ensure that each training session conducted by the MO AEL Technology Center is meeting the needs of participants and providing them with new learning experiences. Formative and summative evaluation instruments/activities will be utilized in each training session.